

**SEWING
MACHINE**

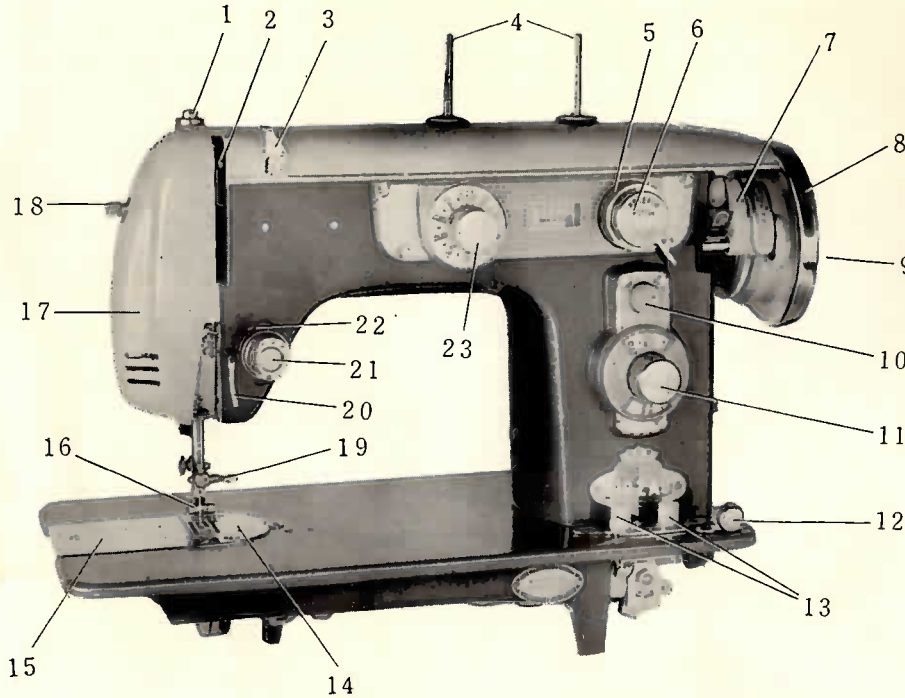
INSTRUCTION MANUAL

ZIGZAG

CONTENTS

	Page		Page
Contents	1	17. Cleaning the Snap-Open-Race	18
Name of Each Parts	2	18. Oiling the Machine	19
Special Features	3	19. Sewing on Button	20
1. Installing Head into Cabinet	4	20. Making Button-Hole	21
2. Attaching Motor to Machine	4	21. Darning & Embroidery	22
3. Built-in-Light	5	22. Quilting	22
4. Winding the Bobbin	6~7	23. Sewing Braids & Raising Applique Stitches....	22
5. To Insert and Remove the Bobbin Case	8	24. Narrow Hemmer	23
6. Threading the Bobbin Case	9	25. French Seam (Felling).....	24
7. Placement of the Needle	10	26. Lace Trimmed Hem	25
8. Threading the Machine	11	27. Lace Edge With Invisible Stitching	25
9. Picking up the Bobbin Thread	12	28. Flat Felled Seam	26
10. Commencing Sewing	12	29. Cloth Guide	27
11. Regulating Thread Tension	13	30. Attaching the Zipper Fastener	27
12. Regulating the Pressure of the Presser Foot ..	14	31. Some Useful Hints	28
13. Drop-Feed Control	15	32. Causes of Common Difficulties	29
14. Regulating Stitch Length	15	33. Needle and thread Sizes (Use 15×1 Needle only)	30
15. Zig-zag Sewing	16	34. Parts List	
16. Automatic Zig-zag Sewing	17		

NAME OF EACH PARTS



- 1 Automatic Darning
- 2 Thread Take Up Lever
- 3 Upper arm Thread Guide
- 4 Spool Pins
- 5 Zigzag Width Restricting knob
- 6 Zigzag Width Control Knob
- 7 Bobbin Winder
- 8 Balance Wheel
- 9 Stop Motion Knob
- 10 Push Button For Reverse Sewing
- 11 Stitch Length Control Knob
- 12 Bobbin Winder Thread Tension Guide
- 13 Push Button Drop Feed
- 14 Needle Plate for Zig-zag Sewing
- 15 Slide Plate
- 16 Presser Foot For Zig-zag Sewing
- 17 Face Cover (Built-in-Light)
- 18 Sew-light Switch
- 19 Needle Clamp
- 20 Upper Thread Retaining bar
- 21 Upper Thread Tension Regulator
- 22 Check Spring
- 23 Automatic Pattern Selecting Dial

SPECIAL FEATURES

AUTOMATIC DARNER (PRESSURE REGULATOR) - enables you to select the exact pressure by pushing the button according to materials.

STITCH LENGTH CONTROL KNOB - regulates the stitch length by turning the knob. It helps you to select the stitch size with ease and accuracy.

PUSH-BUTTON FOR REVERSE SEWING - change to sew reverse stitch from forward by pushing this button.

AUTOMATIC BOBBIN WINDER - winds your bobbin and stops automatically when bobbin is filled.

BUILT-IN-LIGHT - none glare sew-light will be more efficient, light bulb can be changed easily.

PUSH BUTTON DROP-FEED - darning & embroidery can be selected easily and accurately.

AUTOMATIC ZIGZAG SEWING - can be sewn beautiful patterns by turning the knob

1. INSTALLING HEAD INTO CABINET

- 1) Loosen the two hinge screws under the holes in the rear edge of the machine bed (Fig. 1).
- 2) Raise hinge-pins in the cabinet cut-out, slip machine head on the pins, and tighten hinge screws securely.

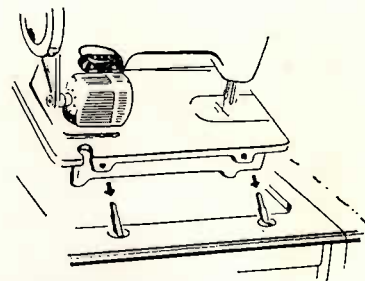


Fig. 1

2. ATTACHING MOTOR TO MACHINE

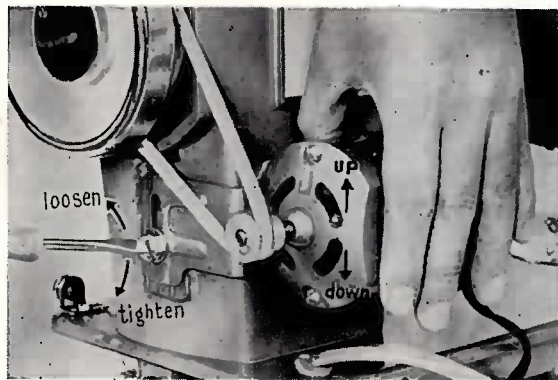


Fig. 2

- 1) Place the motor bracket over the tongue of the arm under the balance wheel, the screw hole in the center of the tongue can be seen through the slot of the motor bracket (Fig. 2).
- 2) Then insert the screw and after shifting the motor upward as far as it will go, tighten the screw.
- 3) Slip the motor belt into the groove of the balance wheel, and then slip the belt into the groove of the motor pulley.
- 4) Adjust the belt tension by loosening the motor bracket fastening-screw and let the motor drop downward until the correct belt tension has been reached.

Then tighten the motor bracket fastening-screw tightly, **NEVER OIL THE MOTOR.**

3. BUILT-IN-LIGHT

As shown in (Fig. 3), lamp is encased in the face cover. Light is put on when the lamp switch (A) is revolved clockwise, and when turned further it is put off. When you want to replace the new bulb, open the face cover and un-screwes. Electric bulb (15w) is available at any department stores, electric shops or your sewing machine dealers.

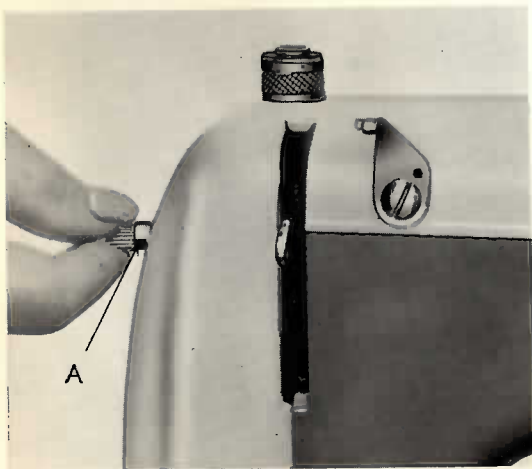


Fig. 3-B

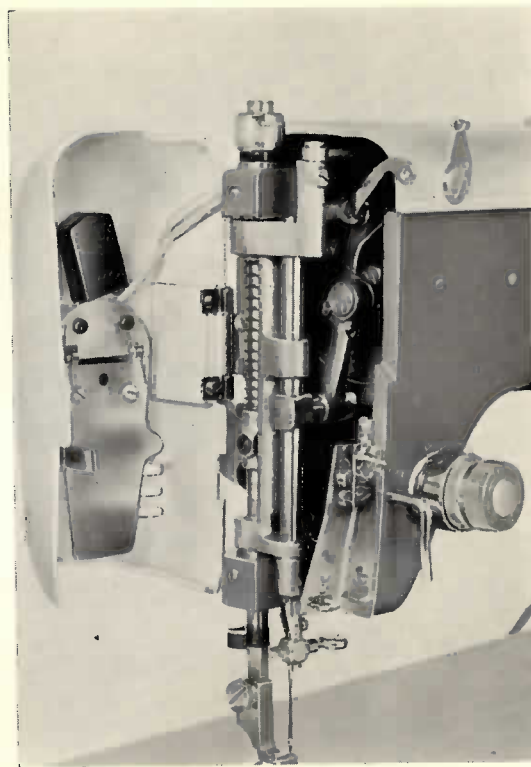


Fig. 3-A

4. WINDING THE BOBBIN

- 1) Hold the balance wheel with your left hand and turn the stop motion knob (A) (Fig. 4) toward you with your right hand (counter-clockwise). The balance wheel is now disconnected for the bobbin winding operation.
- 2) Place a spool of thread on the spool pin (Fig. 5). Draw the thread from the spool to thread guide, then downward across the machine from left to right.
- 3) Pass the thread through the tension device at the right corner on the bed.
- 4) Now wind the end of thread around an empty bobbin several times and insert the bobbin on the bobbin winder spindle.
- 5) Press the bobbin winder cover, until a click is heard. The bobbin winder release lever is now touching the spindle of the bobbin. It holds the bobbin in place.



Fig .4

- 6) Press your foot controller or knee controller in the same manner as in sewing, when the bobbin is nearly full, it will release automatically and stop turning.

Remove the bobbin from the spindle. Hold the balance wheel firmly with the left hand and tighten the stop motion knob away (clockwise) with right hand.

You may continue sewing while you are winding bobbin without disconnecting balance wheel.

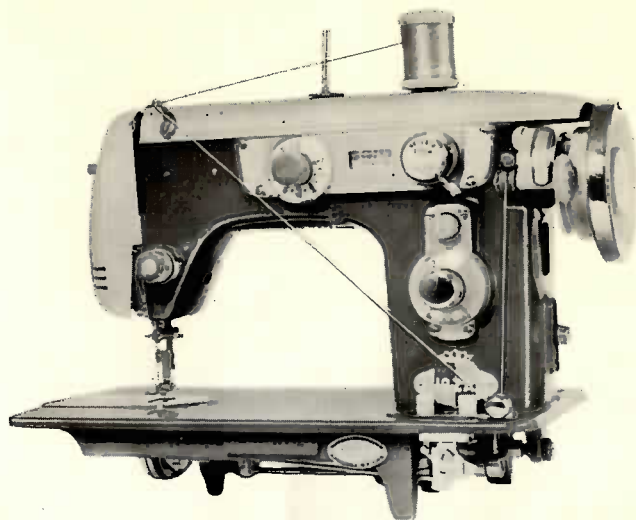
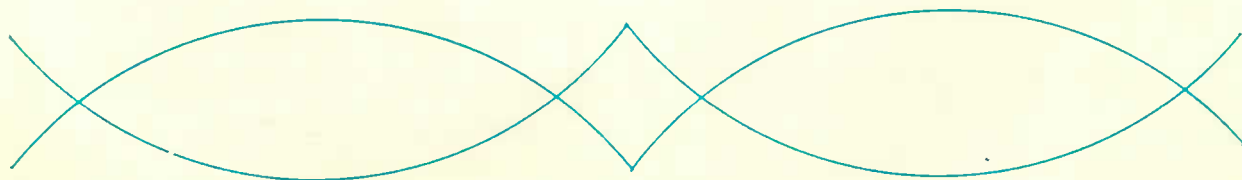


Fig. 5



5. TO INSERT AND REMOVE THE BOBBIN CASE

- 1) Raise the presser bar by lifting the presser bar lifter.
- 2) Turn the balance wheel toward you until needle bar rises to its highest position.
- 3) pull out slide plate to the left (Fig. 6).

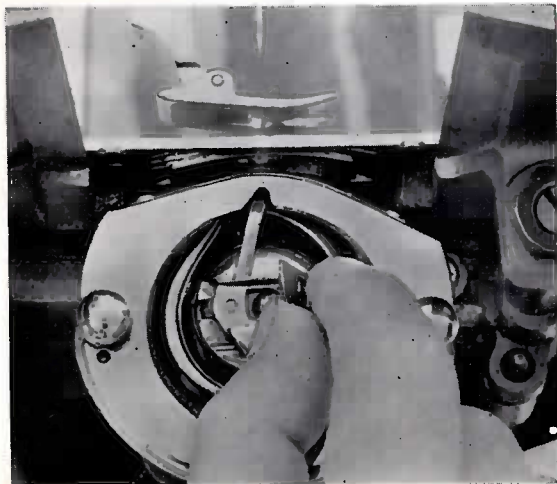


Fig. 7

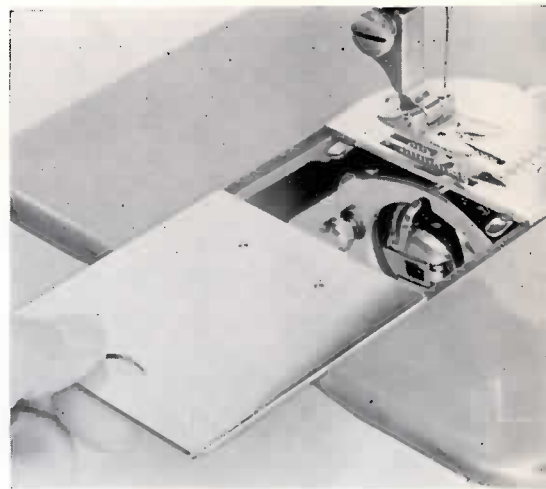


Fig. 6

- 4) With the thumb and forefinger of the left hand, grasp the bobbin case latch with thread coming from the top. Slide out the case (Fig. 7).
- 5) Allow the end of thread to hang free.
- 6) push back the slide plate.

To remove the bobbin case do all the above in reverse order.

6. THREADING THE BOBBIN CASE

Before threading the bobbin case, study (Fig. 8, 9, 10) to get a general idea as to how it is done.

- 1) Hold the bobbin case with your left hand and put the bobbin into the bobbin case with your right hand, leaving about two inches of the thread end unwound (Fig. 8). As the bobbin is being inserted in the bobbin case, the thread flow is clockwise.

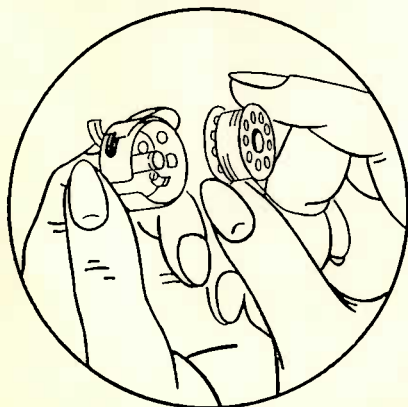


Fig. 8

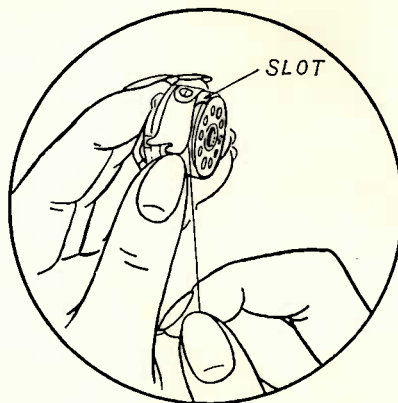


Fig. 9

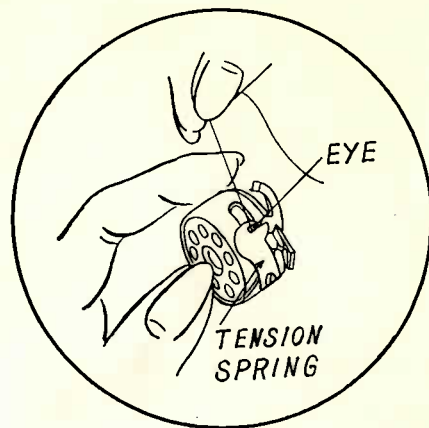


Fig. 10

- 2) Grasp the thread end with your right hand, and draw it into the cross slot (Fig. 9).
- 3) Then pull it through under the tension spring of the bobbin case (Fig. 9) until it enters the delivery eye (Fig. 10).

7. PLACEMENT OF THE NEEDLE

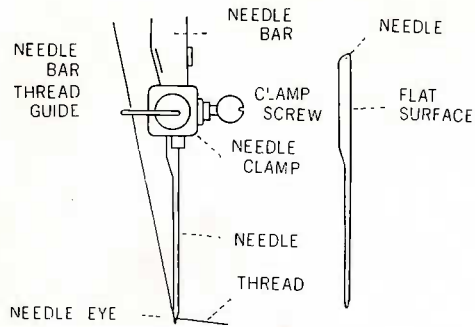
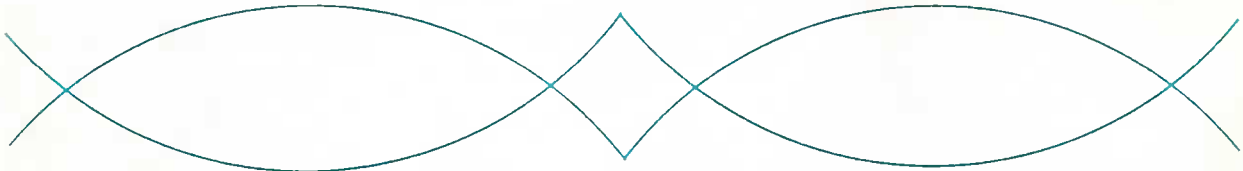


Fig. 11

- 1) Turn the balance wheel toward you, raising needle bar to its highest position, and loosen the needle clamp screw half a turn.
- 2) Hold the needle in the left hand with the point down and insert new needle into needle clamp and push it up as far as it will go, with its flat side to the right; then retighten the clamp screw (Fig. 11).



8. THREADING THE MACHINE

- 1) Turn the balance wheel towards you to raise the needle bar to its highest position.
- 2) Place a spool of thread on spool pin on the arm cover.
- 3) Lead the thread through the arm thread-guide (A) (Fig. 12.)
- 4) Run the thread down to the tension disc (B) and between them from right to left and up. Draw the thread up through the check spring (C).
- 5) Then downward again around the underside of the thread retaining bar (D) and up through the eyelet of the thread take up lever (E) from right to left
- 6) Now run the thread down through both thread guides (F) (G), of the thread protector and then through the loop of the needle bar threadguide (H) from the back.
- 7) Finally, run the end of thread through the eyelet of the needle FROM LEFT TO RIGHT, drawing it through about 3 or 4 inches. You are now ready to sew.

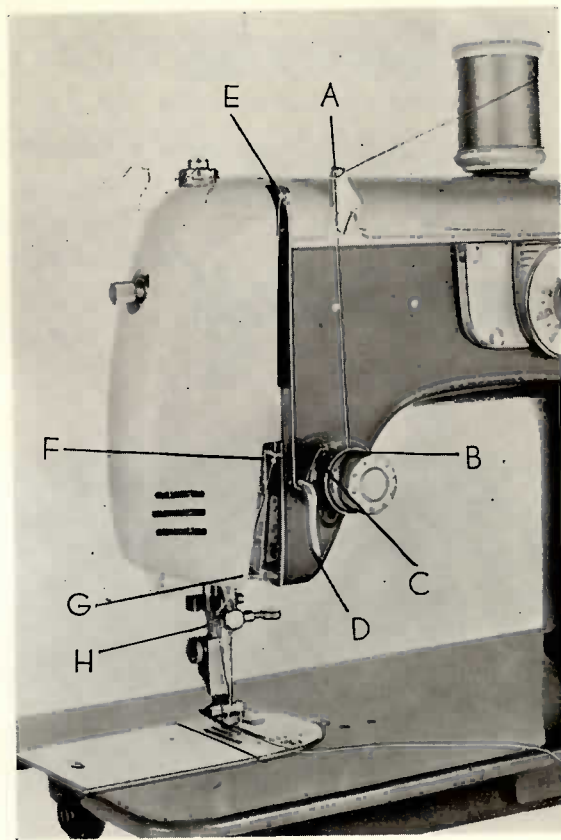


Fig. 12

9. PICKING UP THE BOBBIN THREAD

- 1) Hold the end of upper thread with the left hand, leaving it slack from hand to the needle.
- 2) Turn the balance wheel toward you to raise again the needle bar to its highest position.
- 3) Pull the thread you are holding, and lower-thread loop will be brought up with it through the hole in the needle-plate, as shown (Fig. 13).
- 4) Place both ends of the upper and lower thread to the back of the presser foot (Fig. 14).

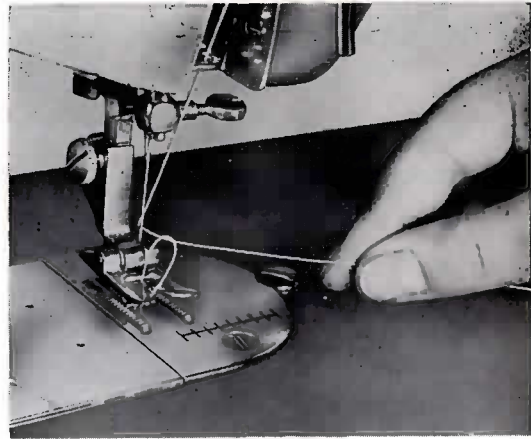


Fig. 13

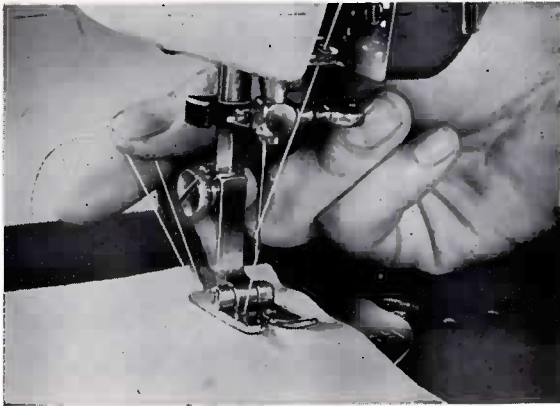


Fig. 14

10. COMMENCING SEWING

- 1) Place the fabric beneath the presser foot.
- 2) Lower the presser foot, by lowering the presser bar lifter.
- 3) Commence sewing by slowly turning the balance wheel in the direction toward you, while gradually working the foot or knee controller.

Turn the balance wheel toward you and not away from you in any way.

II. REGULATING THREAD TENSION

For ordinary sewing, the tension of the upper and lower threads should be equal so as to lock both threads in the center of the material (Fig. 15 A). If one tension is stronger than the other, imperfect stitching will result. Fine material requires a light tension, while heavy material requires more tension to obtain a perfect stitch.

TO INCREASE the tension, lightly turn the thread tension regulator (Fig. 16) clockwise.

TO LESSEN the tension, turn the thread tension regulator to the opposite direction. (Counter-clockwise).

Lower tension regulating screw

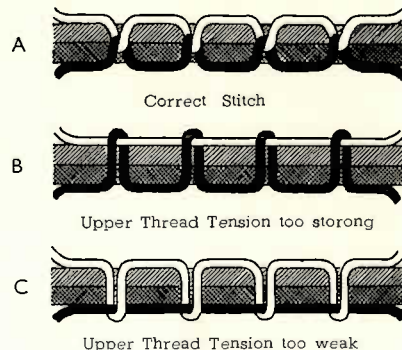


Fig. 17

As all machine are correctly adjusted before leaving the factory and readjusted before the dealer delivers to you, the lower tension seldom requires to be altered; but if this becomes necessary, tighten the screw in the tension

spring on the outside of the bobbin case for more tension, or loosen the screw slightly for lesser tension (Fig. 17).

Fig. 15



Upper
Thread
Tension
Regulator

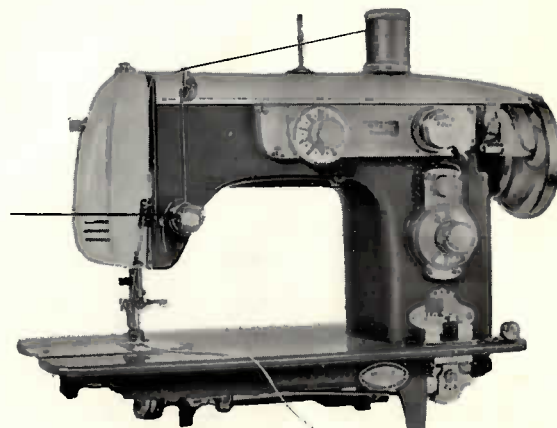


Fig. 16

12. REGULATING THE PRESSURE OF THE PRESSER FOOT

Light materials will not sew well under too much pressure, nor will heavy fabrics under too little.

To adjust for correct pressure, use your automatic darning. When used right in co-ordination with the upper thread tension regulator and the drop feed control, this automatic darning becomes an effective tool for obtaining good sewing results.

To release the pressure for darning and embroidering push the release ring to the direction of arrow (Fig. 18). For ordinary sewing, push down the knob in the center of it. (Fig. 19)

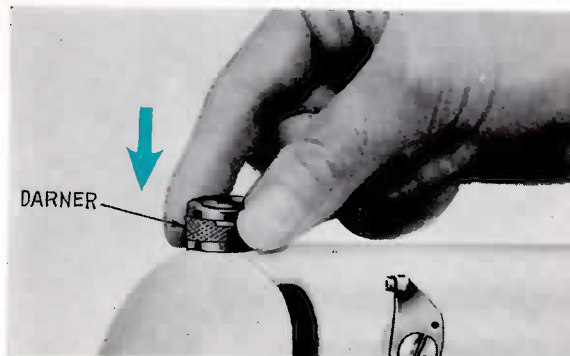


Fig. 18

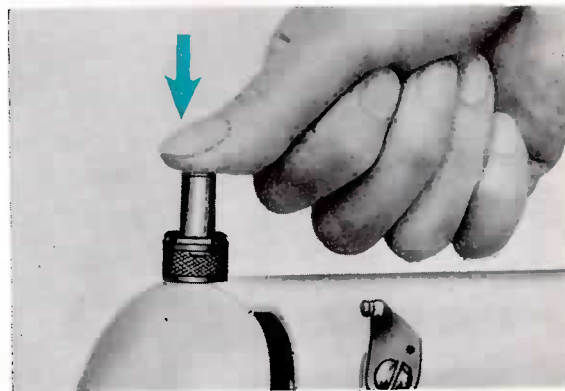


Fig. 19

13. DROP-FEED CONTROL

For regular sewing, push down the right button to its **N**ORMAL position in window.

For silk sewing, push down the left button half way to its **S**ILK position.

For embroidery sewing, push down the left button to its **E**MBROIDERY position in window.



Fig. 20

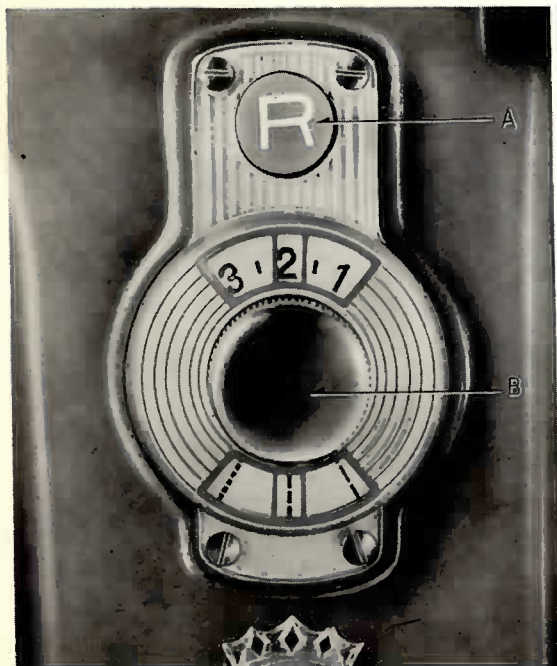


Fig. 21

14. REGULATING STITCH LENGTH

Length of stitch can be adjusted by turning the Stitch length control knob (B). The numerals 0, 1, 2, 3, 4, & stitch model on the stitch window will help you to select easily.

When the control knob is set at "0," position machine does not feed materials,

Reverse stitch in same length as forward stitches will be obtained by pushing reverse button (A)

15. ZIGZAG SEWING

Your zig-zag Sewing Machine, by virtue of its design, permits you to do zig-zag sewing & other kinds of work requiring a similar stitch.

The zig-zag width control knob (A) is located on right side of zig-zag panel, adjusts the width of zig-zag seam. For ordinary straight sewing, zigzag width indicator (C) must be set at "0" position on the window.

By moving this control knob (A) gradually toward "4", (as direction of arrow) the machine will sew a zig-zag stitch increasingly. (Fig. 22)

For special type of works such as sewing button, making tacks etc, zigzag width restricting knob (B) under the zigzag width control knob (A) will be useful.

To restrict the MIN side of width, turn this crick motion knob (B) clockwise.

To release the locking of zigzag width, push this knob, then control knob (A) returns to "0" position automatically.



Fig 22



16. AUTOMATIC ZIGZAG SEWING

This machine can sew the most beautiful and decorative 10 embroidery patterns AUTOMATICALLY by means of various cams built-in-machine.

- 1) Turn the zigzag width control knob (A) clockwise, and indicator (C) moves as far to "AUTO" in the window as it will go, and hold the width control knob (A) in the position.
- 2) Then turn the pattern selecting dial (D) clockwise, and put the stitch pattern you selected to the position.

NOTICE; If the pattern selecting dial (D) is turned to the point 10 as far to the right (clockwise) as it will go, it is not turned more. In that case **MUST BE RETURNED** counter-clockwise.

- 3) After finished above operations, returns zigzag width control knob. Now this machine is prepare for automatic sewing. To change to manual sewing, do all the above operations in reverse order.

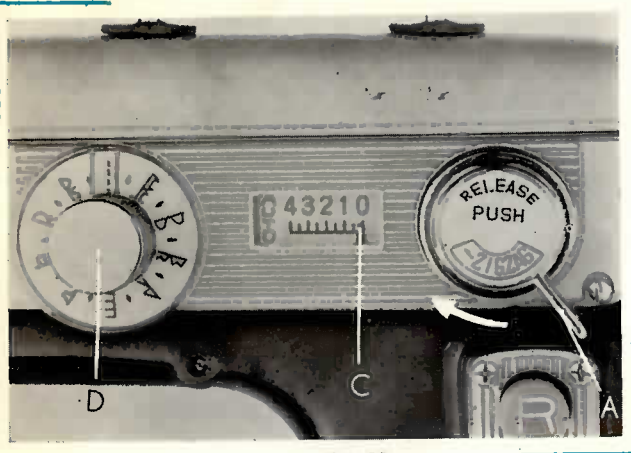


Fig. 23

17. CLEANING THE SNAP OPEN RACE

When the thread is tangled in the race or dust gets into the race-way, this will cause abrupt heavy running or complete stoppage of the machine.

If so:-

- 1) Raise the needle bar to its highest position and take out the bobbin case.

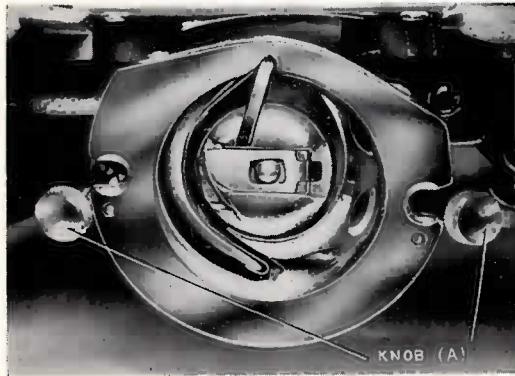


Fig. 25

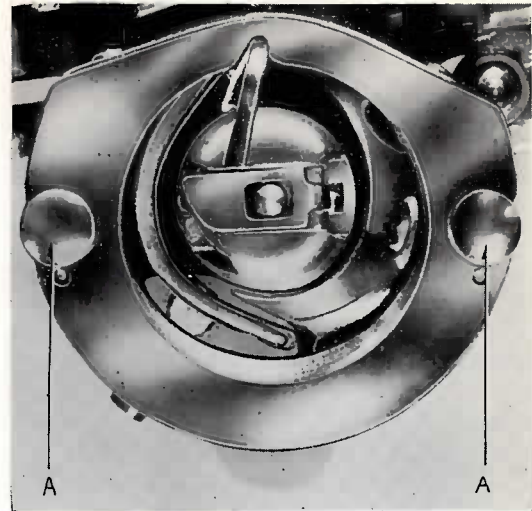


Fig. 24

- 2) Snap-out knob(A) on both sides of shuttle race release to outside, then take out the outside-ring and the shuttle hook with your fingers. (Fig. 24).
- 3) After shuttle-race and shuttle-hook have been cleaned, put them back in reverse order.

17. OILING THE MACHINE

To see that your machine is always in smooth running condition you must keep it oiled at all times. No grease is required. just a drop of oil is sufficient at each time of oiling. Oil at points indicated, in (Fig. 26) (Fig. 27)

To oil your machine thoroughly, it will be necessary for you to remove the arm cover and turn the machine over to get to parts underneath the bed.

After oiling, run the machine at high speed for a few minutes to get oil penetrated to all parts.

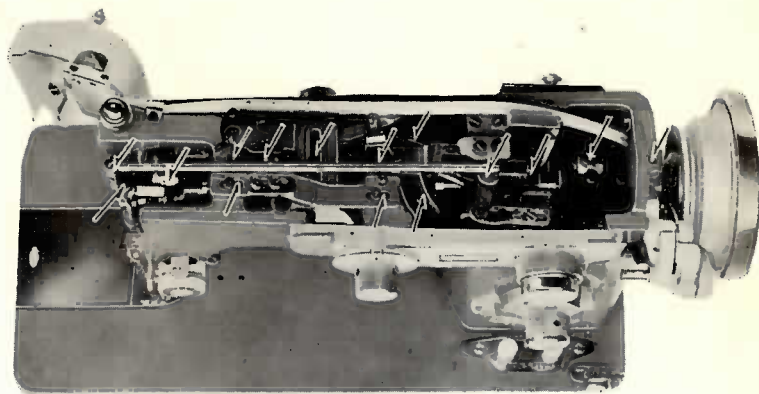


Fig. 26

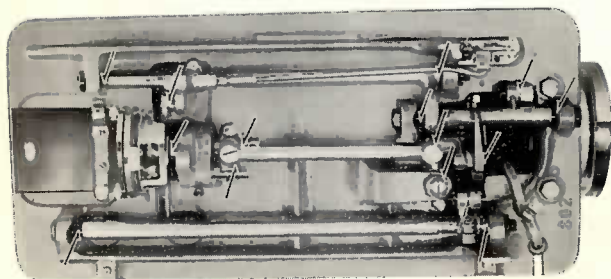
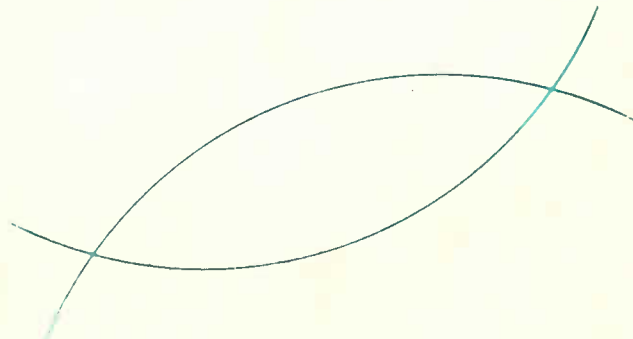


Fig. 27



19. SEWING ON BUTTON

Replace the presser foot for Button sewing as in (Fig. 28). Drop down the feed dog by turning the dropfeed control knob.

Place the material or garment with button under the presser foot, so that holes in button align with oblong hole in presser foot.

Adjust the width of zig-zag stitch to permit the needle to pass through the center of holes in the button. Before sewing with power, turn the balance wheel by hand (toward you) forming one stitch in each hole of the button. Then with power sew five to six stitches to attach the button. Revert the zig-zag width control knob to marking "0" and let the needle stitch two or three times through the same hole to lock the thread. Remove the garment from the machine and snip the threads.

When attaching four-hole buttons, first sew one set of two holes, then stitch into second set of two holes and lock the thread with two or three plain stitches in last hole same as described above. Hooks, eyes, or rings are attached in the same manner.

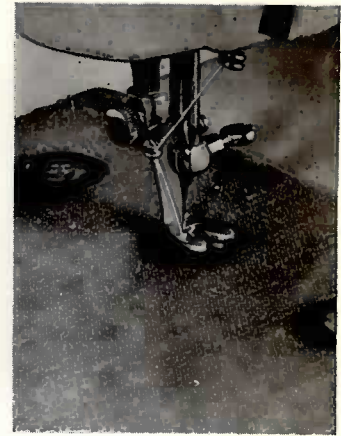
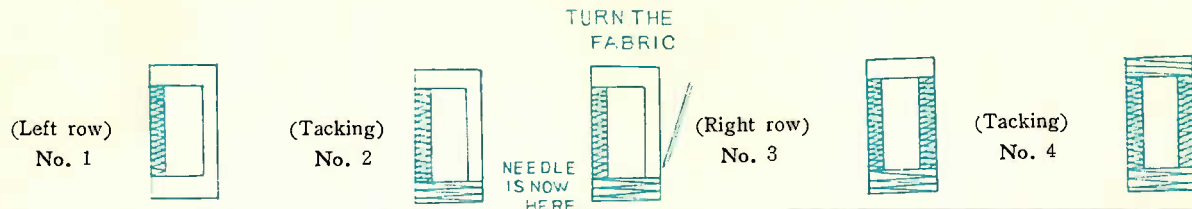


Fig. 28

20. MAKING BUTTON HOLE



- 1) Raise the presser foot and bring the needle to its highest position by turning the balance wheel.
- 2) Replace the presser foot for button hole sewing. (Fig. 29).
- 3) Set the zig-zag width control knob (Fig. 22) between marking 1 and 2, and turn the zig-zag width restricting knob until its stop.
- 4) Regulate the stitch length by turning the control knob (Fig. 21) as close as possible (between 0 and 1).
- 5) Place the fabric under the presser foot, lower presser foot, and start sewing until reaches the length you want. (No. 1)
- 6) Move the control knob to marking 4, and make 5~6 stitches (bar tack). (No. 2)
- 7) Return the control knob former position.
- 8) Lift the presser foot a trifle, and turn the fabric clockwise using the needle as a pivot.
- 9) Lower the presser foot, and continue sewing until second row of stitches is as long as first row. (No.3.)
- 10) Move the control knob to marking 4, and make 5~6 stitches. (bar tack) (No.4.)
- 11) Turn the balance wheel by hand and bring needle up, and out of fabric.
- 12) Lift the presser foot and fabric. (away from you)

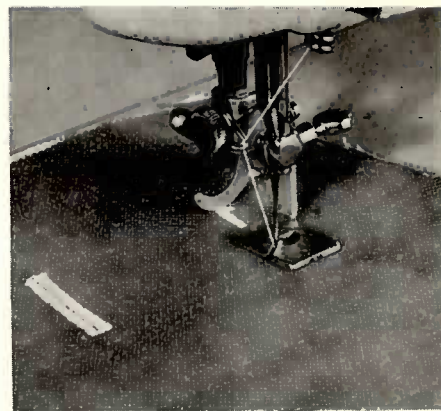


Fig. 29

NOTE: In sewing second row of stitches, be sure to guide first row of stitches in groove provided for it on bottom face of button hole foot, then both row of pearl stitches will be spaced apart properly, this also prevents row edge after the space between these row of stitches has been cut open.

21. DARNING & EMBROIDERY

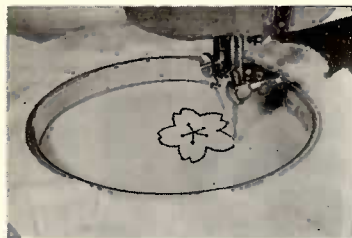


Fig. 30

It is easy to follow a stamped design or to work free hand when embroidering or monogramming (Fig. 30). Push down the drop feed left button full way. Replace the needle plate for embroidering and remove the presser foot. Stretch the fabric in an embroidery hoop to make most successfully. Hold the hoop closely on the machine base with both hands, press the fabric with left index finger in the vicinity of the needle to prevent the making skip stitches. Manipulate work carefully and be sure to keep fingers out of path of the needle to avoid injury. For best appearance, increase the lower thread tensions slightly than the upper thread.

22. QUILTING

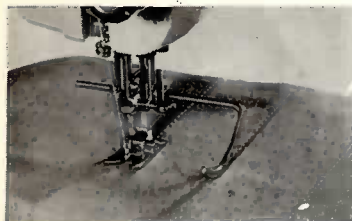


Fig. 31

The quilter helps you to sew equi-distant lines on padded fabrics without any marking them in advance. To attach the quilter to the presser bar, first pull long wire hook out of horse-shoe shaped clamp. Stride the clamp on the presser bar from behind and over the presser foot, and push the wire hook into previous place. (Fig. 31) Adjust the wire hook to desired distance from the needle and bring it to press onto fabrics. Then tighten thumb-screw to lock quilter. When sewing, wire hook should follow preceding line of stitching. Zigzag stitch quilting is done the same as straight stitch quilting with the preceding exception of the position of the zigzag width control knob which should be set for desired zigzag width.

23. SEWING BRAIDS & RAISING APPLIQUE STITCHES

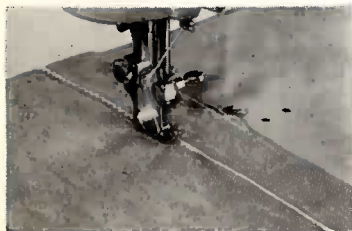


Fig. 32

Remove the presser foot and attach the cording foot, (Fig. 32) Insert the braid through a small hole at the front of foot. Adjust the zigzag width and stitch length to obtain a covering of the braid which appears the most desirable for the material you are sewing. Using a needle thread of a contrasting color will enhance the beauty of your cording.

24. NARROW HEMMER

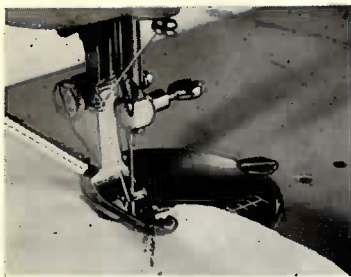


Fig. 33

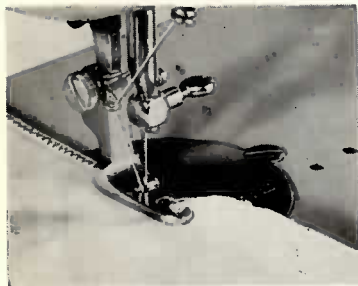


Fig. 34

With the needle in its highest position, replace the presser foot with the narrow hemmer. (Fig. 33) For a plain narrow hem. Make a $1/8$ inch double fold for about 2 inches along the edge of fabric. Hold each end of 2-inch fold, slip underneath hemmer. Bring fold up into the scroll of hemmer, draw forward to end and fasten with point of the needle. Lower the presser foot. Gently pull the end of thread as you start stitching. Guide the material slightly to right, and it will automatically take a double turn through scroll.

NOTE; Do not crowd the material into scroll and do not leave scroll only partly filled by the material. Feed just enough material into the hemmer foot to fill out the scroll. Also you can make the zigzag hemming operation, by adjusting the width of zigzag seam to be as wide as the hem itself. Using a very long stitch and tighten the tensions will produce a shell stitch. (Fig. 34)

25. FRENCH SEAM (FELLING)

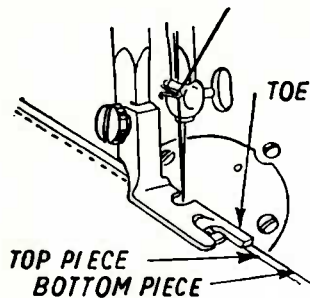


Fig. 35

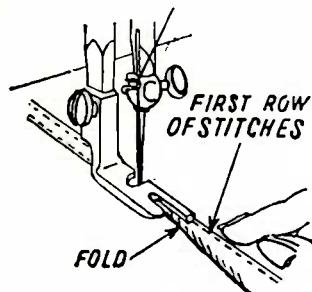
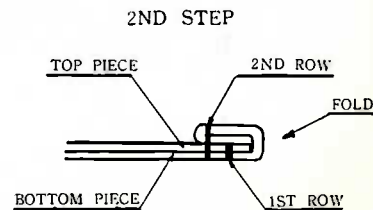
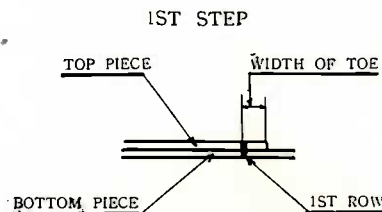


Fig. 36

The hemmer foot can also be used for doing felling. Proceed in the following manner:

1. Lay two pieces of cloth one on top of the other with their RIGHT sides facing each other. The right edge of the bottom piece must extend about 1/8 inch beyond the right edge of the top piece. See (Fig. 35.)
2. Sew both pieces of cloth together, use the right edge of long toe of hemmer foot to guide the bottom piece of material, while the left edge of the same toe serves as a guide for the top piece of material. (Fig. 35.)
3. Open and spread out material and put back on machine right sides downward. Make sewn edges of material stand up.
4. Fold over the edges to the left and insert them into the scroll of the hemmer foot. Sew as you would do ordinary hemming. Use left edge of long toe of hemmer foot as guide, having original seam run alongside of it (Fig. 36).



26. LACE TRIMMED HEM

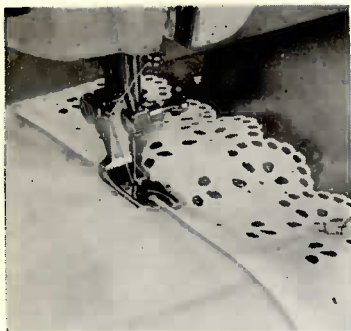


Fig. 37

To attach the lace to hem, insert the lace in the slot next to needle. Sew hem as above, guiding lace under needle and hem into scroll (Fig. 37).

27. LACE EDGE WITH INVISIBLE STITCHING

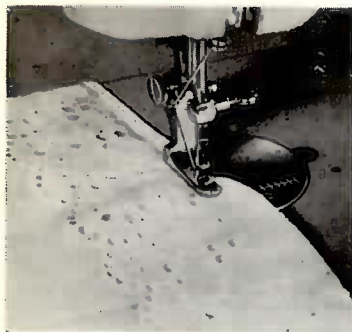


Fig. 38

Hold the lace $\frac{1}{8}$ inch from raw edge on right side of fabric. Insert both in scroll as for plain narrow hem. Let hem roll over and sew in lace. Press lace out flat along edge with hem turned up. For a little fullness in lace, feed it freely under scroll (Fig. 38).

28. FLAT FELLED SEAM

Open out French seam and insert rolled edge in scroll of hemmer. Edge stitch to lay seam flat (Fig. 39).

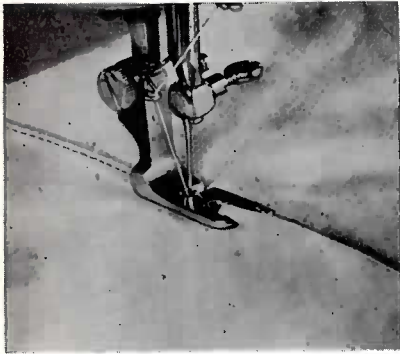
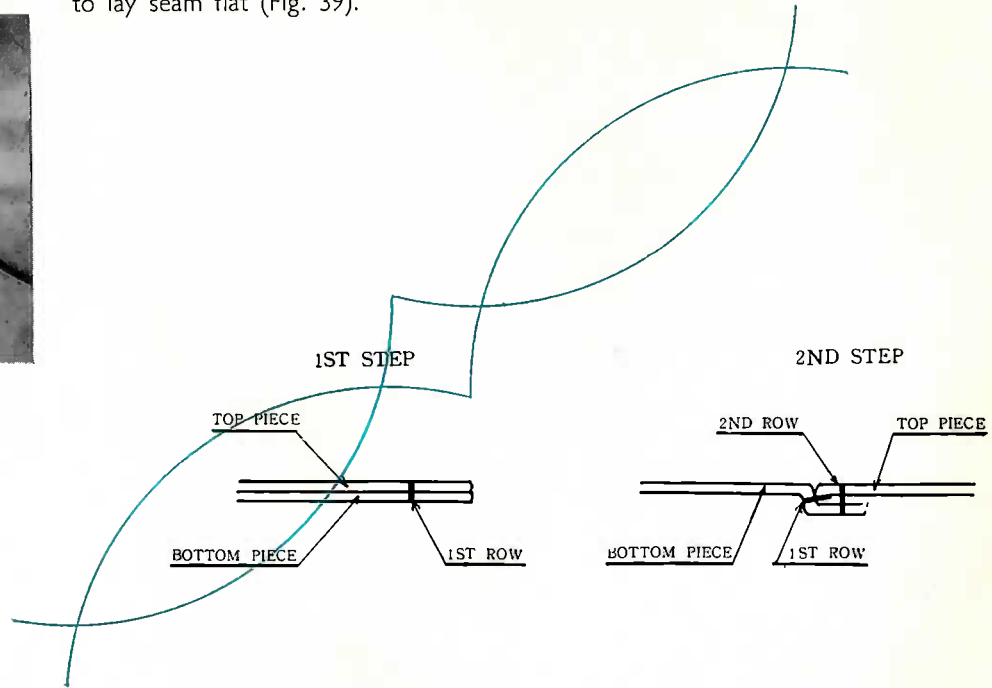


Fig. 39



28. CLOTH GUIDE

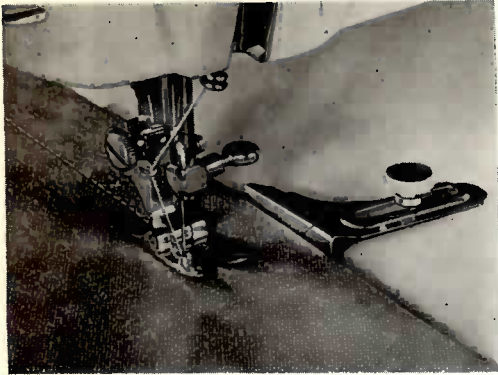


Fig. 40

This is an attachment designed as a guide for straight stitching when making wide hems, deep tucks or seam width which are greater than presser foot allows. (Fig. 40).

It is attached to machine as illustrated a very simple operation.

29. ATTACHING THE ZIPPER FASTENER

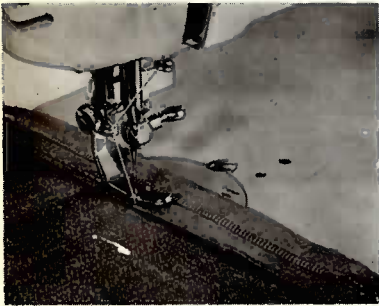


Fig. 41

- 1) Remove the presser foot & attach the adjustable zipper foot. (Fig. 41).
- 2) Zipper foot set to sew on the right of the needle, close to the edge of the material which is turned to from a bracket or opening, so as to avoid striking the zipper links.
- 3) Now, to sew on the opposite side of the zipper fastener, loosen the screw and slide the zipper foot over to the left of the needle, so as to sew close to the edge without striking the zipper links.

31. SOME USEFUL HINTS

TO TURN CORNERS:

1. Stop the machine while the needle is still in the material.
2. Raise the presser foot and turn the fabric using the needle as a pivot.
3. Lower the presser foot and resume sewing.

TO SEW ELASTIC FABRICS:

In sewing such elastic materials flannels, bias cut cloths etc, it is advisable to sew them with moderately low thread tension, otherwise the thread will break when the sewn materials are stretched.

TO SEW VERY THIN CLOTH:

When sewing very thin cloth which tends to gather as you sew, place a sheet of newspaper or any other thin paper underneath the material and sew with the shortest stitch possible. This will keep your work from gathering.

BASTING:

1. Use a thicker lower thread than the upper.
2. Loosen the tension of the upper thread (and or tighten the lower thread tension) and employ the longest stitch possible.
3. The stitches may be easily undone by pulling the lower thread.

TO KEEP YOUR MACHINE IN PERFECT CONDITION:

1. Keep all moving parts of the machine constantly oiled and clean.
2. Always turn the balance wheel towards you, even by hand.
3. Do not run the machine without cloth.
4. When sewing, do not pull the material otherwise you will bend the needle. The machine is designed to feed itself.
5. Do not operate the machine when presser bar lifter is raised.

32. CAUSES OF COMMON DIFFICULTIES

BREAKING OF THE UPPER THREAD:

1. Incorrect threading.
2. Upper thread tension too tight.
3. Faulty needle or needle set in incorrectly.
4. Needle brushing against presser foot or other attachments.
5. Upper thread too big for needle eye.
6. Starting the machine suddenly or with a jerk.
7. Starting the machine with the take up lever at its highest position.

BREAKING OF THE LOWER THREAD:

1. Incorrect threading of the bobbin case.
2. Lower thread tension too tight.
3. Bobbin being wound too fully.
4. Rough edge of hole in needle plate caused by improper needle action.

BREAKING OF THE NEEDLE:

1. Pulling the fabric while machine is sewing thus causing the needle to strike the needle plate or shuttle hook.
2. Using bent needle or incorrect setting.

SKIPPING STITCHES:

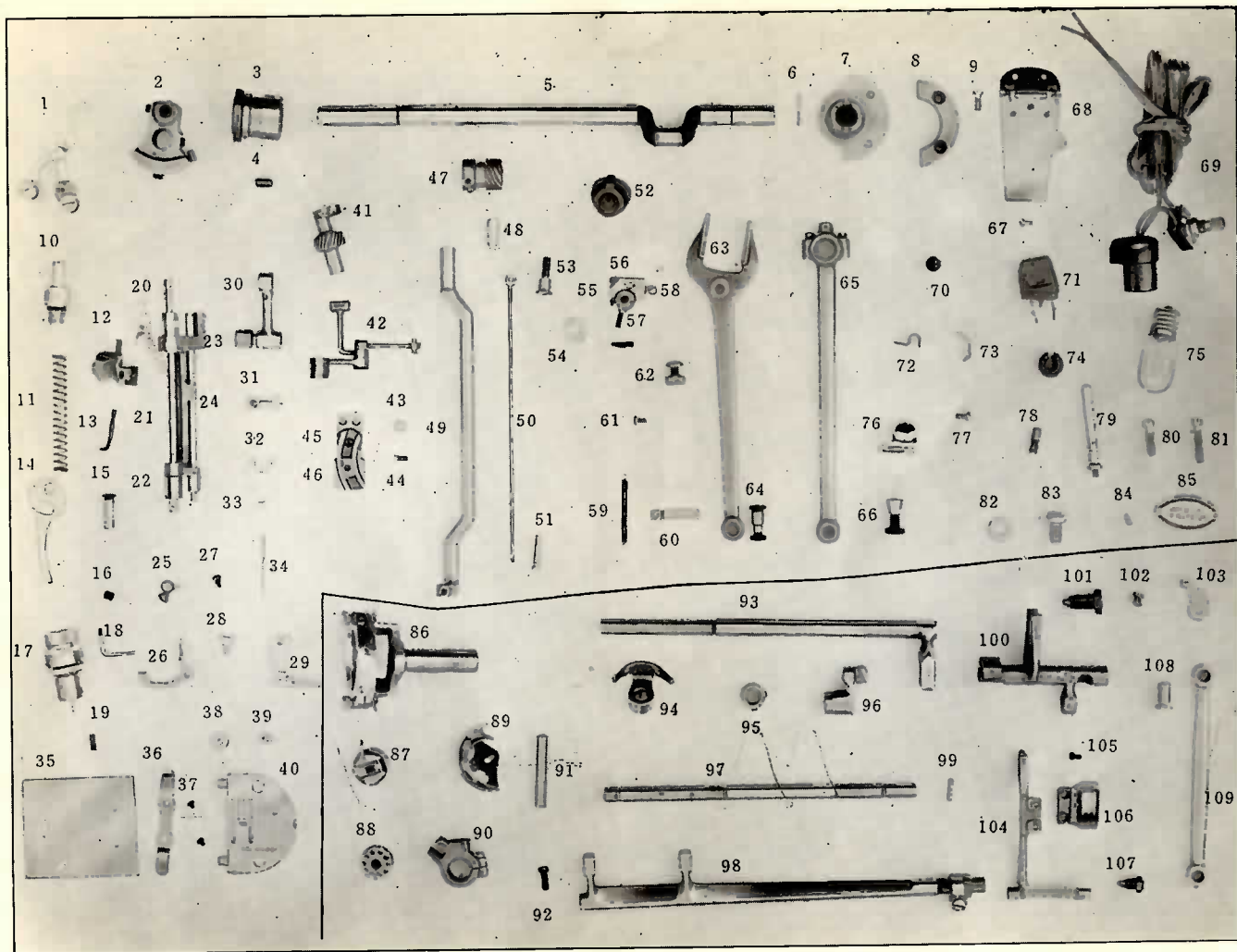
1. Using bent or blunt needle.
2. Needle inserted incorrectly.
3. Needle threaded improperly.
4. Using wrong size needle.
5. Pressure of presser foot insufficient, especially when sewing heavy material.

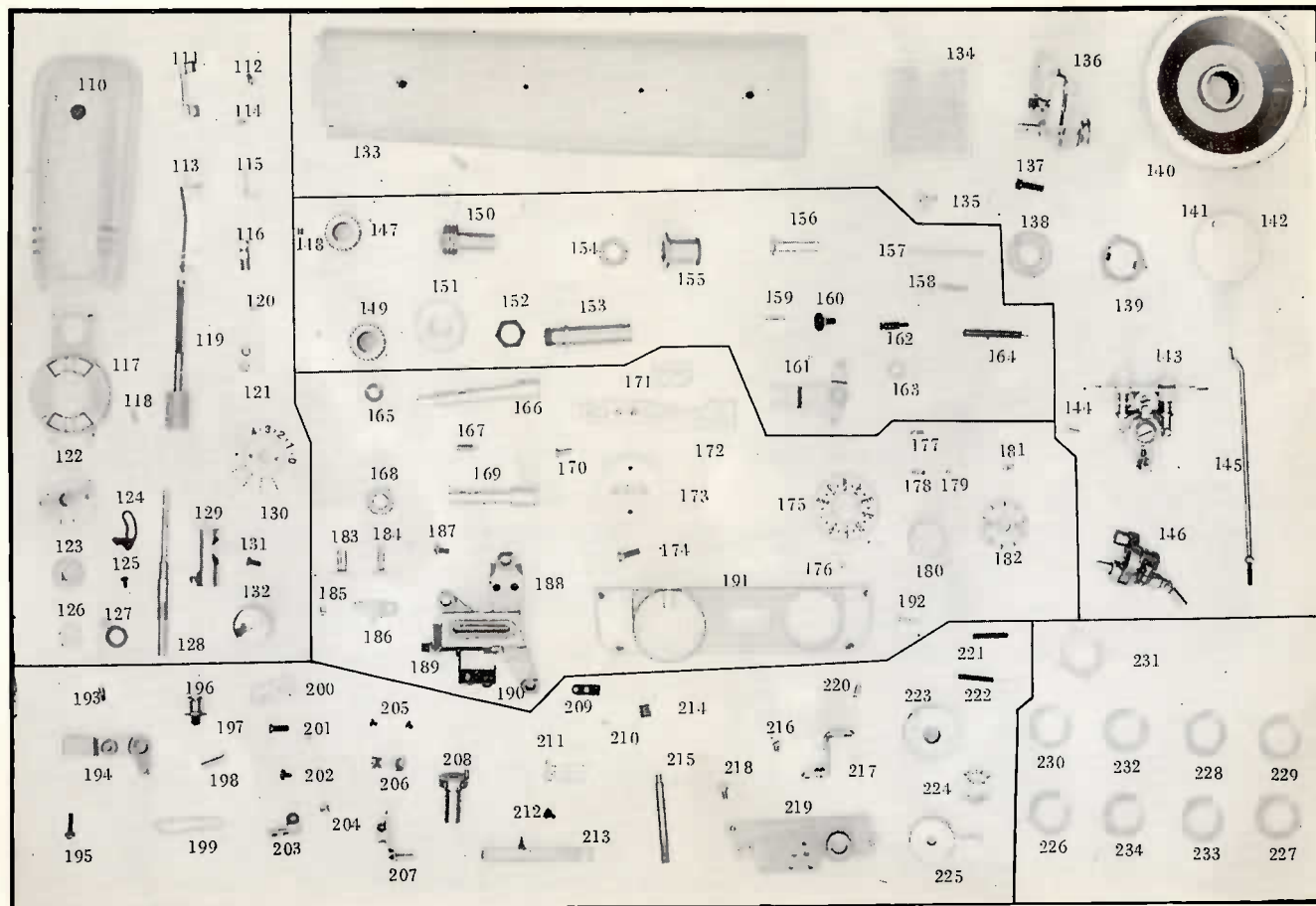
UNEVEN STITCHES:

1. Presser foot not resting evenly on material.
2. Feed dog not being high enough.
3. Too short stitches used.
4. Pulling the cloth while the machine is sewing.
5. Using too fine a needle with too coarse a thread.

33. NEEDLE AND THREAD SIZES (USE 15 × 1 NEEDLE ONLY)

Sizes & Grades of Needles	Type of Fabric and Work to be done	SIZE OF THREAD		
		Cotton	Silk	Linen
B or 11 (Medium-Fine)	Medium light-weight and summertime fabric. For house dresses, children's dresses, washable cotton dresses, aprons, curtains.	80 to 100	0 Twist	
1/2 or 14 (Medium)	Dress, silk and cotton, light weight woolens, draperies, fabric furnishings. For general household sewing, fine men's shirts, smocks, window draperies and fabric decorations.	60 to 80	A & B Twist	
1 or 16 (Light-Heavy)	Heavy cretonne, madras, muslin, brocades and quilts. For men's work shirts, studysmocks and aprons, heavy quilting and fabric furnishings.	40 to 60	C Twist	
2 or 18 (Medium-Heavy)	Heavy woven coating, light weight canvas, bed ticking, upholstery and awning materials, slipcover fabrics. For work or sports uniforms, suits made of strong linen or cotton fabrics, awnings, slip covers and mattresses.	30 to 40	D Twist	
3 or 19 (Heavy)	Heavy woven suiting, coating, duck, ticking, drilling, canvas and sacking. For heavy wash uniforms, bedding supplies for hospitals, hotels and camps.	10 to 30	E Twist	60 to 80
4 or 21 (Extra-Heavy)	For bags, canvas, coarse cloths and heavy goods.	Very Coarse		40 to 60





Parts No.	Parts Name	Parts No.	Parts Name	Parts No.	Parts Name
1	Thread take up lever (assembly)	40	Needle plate for zigzag sewing	79	Spool-pin w/nut (collapsible type)
2	Needle bar crank w/ screws	41	Zigzag cam gear (assembly)	80	Fastening-screw for arm cover (short)
3	Upper shaft bushing	42	Vertical rock shaft arm, rod & needle bar connecting junction.	81	Fastening-screw for arm cover (long)
4	Set-screw for 3	43	Zigzag movement roller	82	Washer for 83
5	Upper shaft	44	Fastening-screw for 45	83	Fastening-screw for motor bracket
6	Taper pin (large)	45	Zigzag oscillating cam guide (assembly)	84	Marking-pin
7	Balance wheel bushing	46	Zigzag movement sector	85	Warranty plate
8	Balance weight	47	Zigzag spiral gear (upper shaft)	86	Shuttle race (assembly)
9	Fastening-screw for 8	48	Center-pin for 49	87	Bobbin case (assembly)
10	Automatic darning	49	Vertical rock shaft	88	Bobbin
11	Pressure spring	50	Connecting bar for needle bar support	89	Shuttle hook
12	Guide-bracket for presser bar	51	Pin for 50	90	Shuttle race guide-bracket
13	Lifting-pin for upper thread tension release	52	Feed cam w/screw	91	Shuttle race guide-bar
14	Presser bar lifter	53	Hinge-screw for feed regulator	92	Set-screw for 91
15	Pin for 14	54	Washer for feed regulator	93	Feed lifting rock shaft
16	Set-screw for 15	55	Feed regulator w/screw	94	Shuttle driver
17	Upper thread tension regulator (assembly)	56	Clamp-screw for reverse push button	95	Collar w/screw for lower shaft
18	Thread retaining bar	57	Pin for 55	96	Lower shaft crank w/slide-block (assembly)
19	Set-screw for 17	58	Wire-bracket for 59	97	Lower shaft
20	Upper bushing for presser bar	59	Pull-spring for feed regulator	98	Feed driving rock shaft w/arm
21	Presser bar	60	Bracket for 59	99	Taper pin (small)
22	Lower bushing for presser bar	61	Fastening-screw for 60	100	Oscillating rock shaft
23	Needle bar support	62	Slide-block w/stud for feed regulator	101	Center-screw w/nut (large)
24	Needle bar	63	Forked rod	102	Fastening-screw for 103
25	Thread cutter	64	Hinge-screw w/nut for 63	103	Upper thread guide
26	Upper thread tension release	65	Crank connecting rod	104	Feed dog bearer
27	Pivot-screw for 26	66	Hinge-screw w/nut for 65	105	Fastening-screw for 106
28	Thumb-screw for presser foot	67	Fastening-screw for 68	106	Feed dog (dia-cut)
29	Presser foot for zigzag sewing	68	Sew-light reflector (assembly)	107	Center-screw w/nut (small)
30	Needle bar connecting link w/ stud	69	Sew-light cord, switch & socket (assembly)	108	Pin for 109
31	Needle clamp	70	Signal cap	109	Shuttle race driving rod
32	Thread guide for needle clamp	71	Sew-light plug	110	Face cover
33	Fastening-screw for 32	72	Cord clamp (A)	111	Face cover hinge (1 set)
34	Needle	73	Cord clamp (B)	112	Fastening-screw for 111
35	Slide plate	74	Cord bushing (rubber)	113	Upper thread protector (assembly)
36	Back-spring for slide plate	75	Sew-light bulb	114	Fastening-screw for 113
37	Fastening-screw for 36	76	Bobbin winder thread tension guide	115	Face cover catch spring
38	Clamp-screw for needle plate	77	Fastening-screw for 76	116	Face cover clamp bracket w/screws
39	Guiding-screw for needle plate	78	Set-screw for cabinet hinge	117	Stitch panel
				118	Fastening-screw for 117

Parts No.	Parts Name	Parts No.	Parts Name	Parts No.	Parts Name
119	Push button for reverse sewing	159	Pin for 161	199	Regulating-plate for zigzag width
120	Fastening-screw for 121	160	Pivot-screw for 161	200	Zigzag width stopper (nylon)
121	Guide-plate for reverse push button	161	"T" plate for width control	201	Set-screw for 200
122	Bushing for stitch length control shaft	162	Bracket for 163	202	Clamp-screw for 199 & 203
123	Collar w/screws for 128	163	Washer for 161	203	Adjusting-plate for zigzag width control
124	Stopper for stitch length control knob	164	Pull spring for 161	204	Caulking-pin for 203
125	Fastening-screw for 124	165	Collar w/screw for 166	205	Fastening-screw for 206
126	Nut for stitch length control shaft	166	Main shaft for auto-cam	206	Zigzag width restricting plate
127	Washer for 126	167	Set-screw for cam selector shaft	207	Control crank for zigzag width
128	Stitch length control shaft	168	Collar w/screw for 169	208	Bushing for zigzag width restricting knob
129	Stitch length control cam w/screw	169	Worm shaft (auto)	209	Stopper for 206
130	Stitch dial	170	Guide-pin for 172	210	Set-screw for 209
131	Fastening-screw for 130	171	Adjusting bracket for 172	211	Zigzag width dial
132	Stitch length control knob	172	Transmitting-plate for cam selector	212	Guide-screw for 213
133	Arm cover	173	Pattern selecting gear	213	Zigzag width indicator
134	Arm shield	174	Fastening-screw for 173	214	Spring for zigzag width restrictor
135	Thumb-screw for 134	175	Pattern selecting dial	215	Shaft for zigzag width control knob
136	Bobbin winder (assembly)	176	Clamp-screw for 175	216	Fastening-screw for 217
137	Fastening-screw for 136	177	Crick-pin for pattern selection	217	Support for 215
138	Bobbin winder rubber ring	178	Crick-spring for pattern selection	218	Fastening-screw for 219
139	Stop motion clamp washer	179	Crick-ball for pattern selection	219	Installing-plate for zigzag width regulation
140	Balance wheel	180	Pattern selecting knob	220	Pin for
141	Stop motion stop-screw	181	Fastening-screw for 182	221	Spring for 213
142	Stop motion knob	182	Base-bushing for pattern selecting knob	222	Spring for zigzag width restricting knob
143	Push-button drop-feed control (assembly)	183	Bushing for cam selector shaft	223	Zigzag width restricting knob
144	Fastening-screw for 143	184	Shaft for cam selector	224	Decoration for 225
145	Connecting-bar for drop-feed w/nut	185	Pin for cam selector	225	Zigzag width control knob
146	Drop feed w/roller (assembly)	186	Cam selector	226	Auto cam (C)
147	Spiral-gear for upper shaft (auto)	187	Fastening-screw for auto-base	227	Auto cam (B)
148	Set-screw for 147	188	Base for automatic device	228	Auto cam (J)
149	Spiral gear (for auto device)	189	Driving gear for auto-cam	229	Auto cam (D)
150	Worm w/bushing	190	Auto-cam support w/guide-pins	229	Auto cam (D)
151	Worm gear (for automatic device)	191	Zigzag panel	230	Auto cam (I)
152	Nut for 153	192	Fastening-screw for 191	231	Auto cam (F)
153	Bushing for auto cam shaft	193	Pin for 194	232	Auto cam (H)
154	Clamp-nut for 155	194	Zigzag width regulator	233	Auto cam (E)
155	Bushing for auto-cam clamp	195	Max. stopper w/nut	234	Auto cam (G)
156	Shaft for pattern selecting knob	196	Clamp-screw for 197		
157	Key for auto cam shaft	197	Pin for 194		
158	Key for cam clamp bushing	198	Driving-pin for 194		

